



STATE OF CALIFORNIA

ELECTRICITY OVERSIGHT BOARD

770 "L" Street, Suite 1250
Sacramento, CA 95814
916.322.8601
916.322.8591 (fax)

MEMORANDUM

Date: April 13, 2001

To: Electricity Oversight Board Members:
Ms. Kari Lynn Dohn, Member
Mr. Bruce G. Willison, Member
Senator Debra Bowen, Member
Assemblyman Roderick D. Wright, Member

From: Ben T. Arikawa, Senior Economist

Subject: Item 6B First Quarter 2001 Market Conditions and Electricity Emergencies

A brief review of market conditions is attached.

For first quarter 2001, we had 57 Stage 1, 52 Stage 2, and 36 Stage 3 electricity emergencies. Between January 16th and February 16th we experienced 32 consecutive Stage 3 emergencies.

Firm customer load curtailments were as follows:

Tuesday, January 17th, 500 MW.

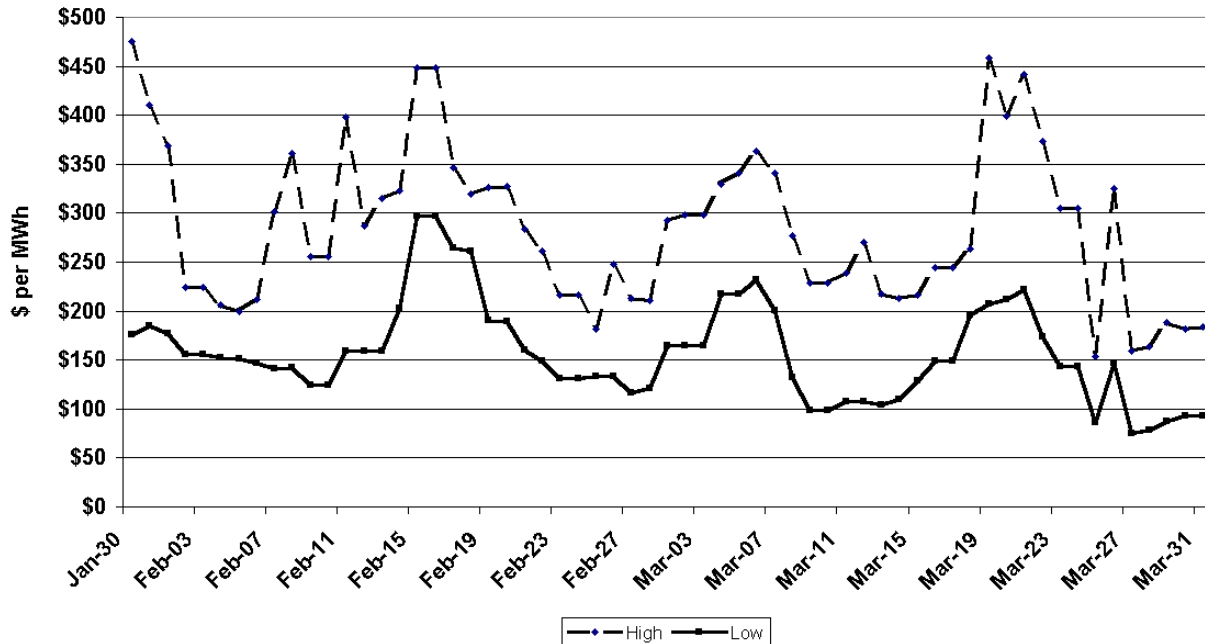
Wednesday, January 18th, 1000 MW.

Sunday, January 21st, 101 MW.

Monday, March 19th, 1000 MW.

Tuesday, March 20th, 500 MW

Figure 1
Comparison of
Average Firm High and Low Prices
For California Locations

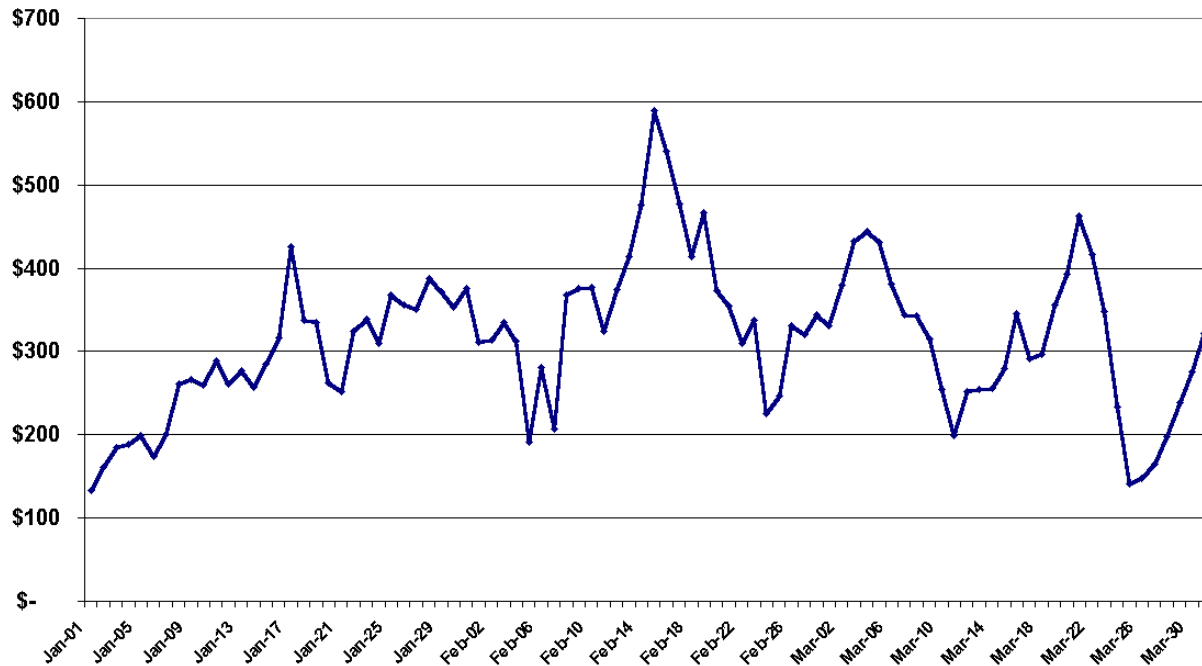


Electricity Prices

Electricity prices and costs remained relatively high throughout the first quarter. With the demise of the California Power Exchange, we no longer have good information on market transactions. The information we do receive is incomplete and does not necessarily offer us a picture of how California electricity markets are functioning.

Using this information, we can show daily high and low average electricity prices for trades at California locations (California-Oregon border, North Path 15 and South Path 15). The period covered is January 30 through March 31 as we did not collect this information previous to January 30. High prices ranged from \$154 per MWh on March 25 to \$475 per MWh on January 30. Low prices ranged from \$75 per MWh on March 27 to \$297 per MWh on February 15 and 16.

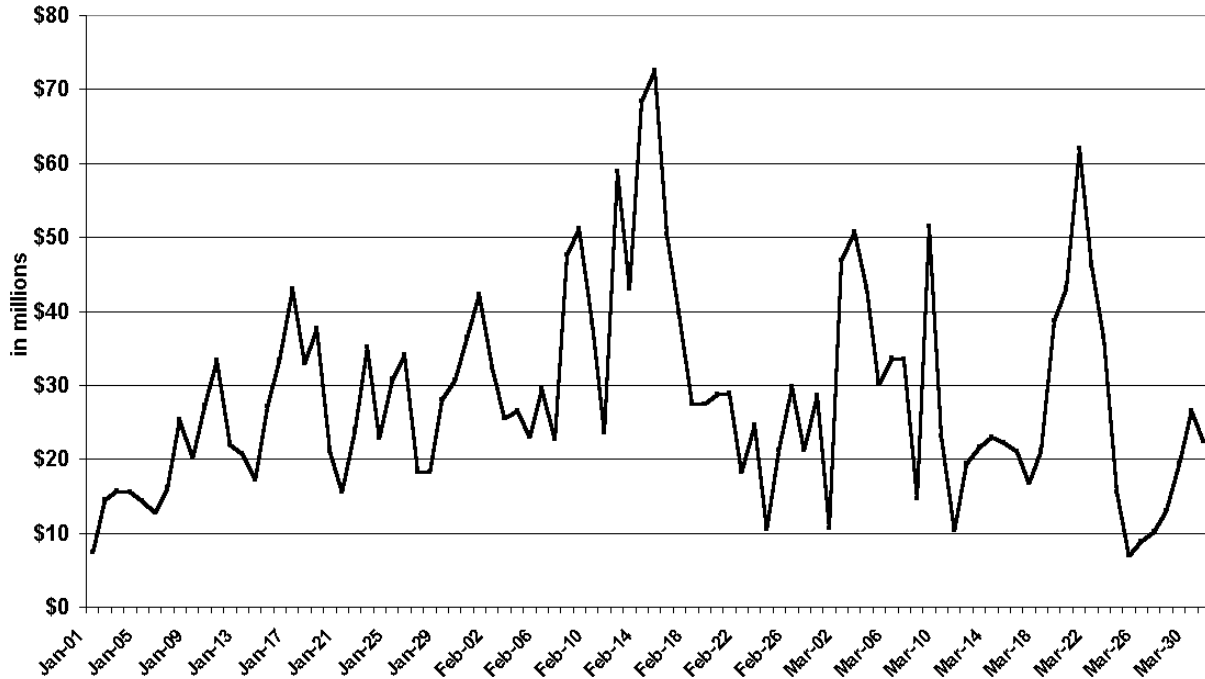
Figure 2
Average Cost of CAISO Real Time Purchases
(in \$ per MWh)



Average Cost of California Independent System Operator Purchases

The average cost of California Independent System Operator purchases in real time varied widely during the quarter. The average cost began the quarter at about \$130 per MWh and began rising towards \$300 per MWh by mid month. The average cost reached \$425 per MWh on January 17 before falling back to the mid-\$300 range. The average cost again spiked to \$590 per MWh on February 15 before falling. By the end of the quarter, the average cost was \$321 per MWh.

Figure 3
CAISO Real Time Expenditures
(in millions)

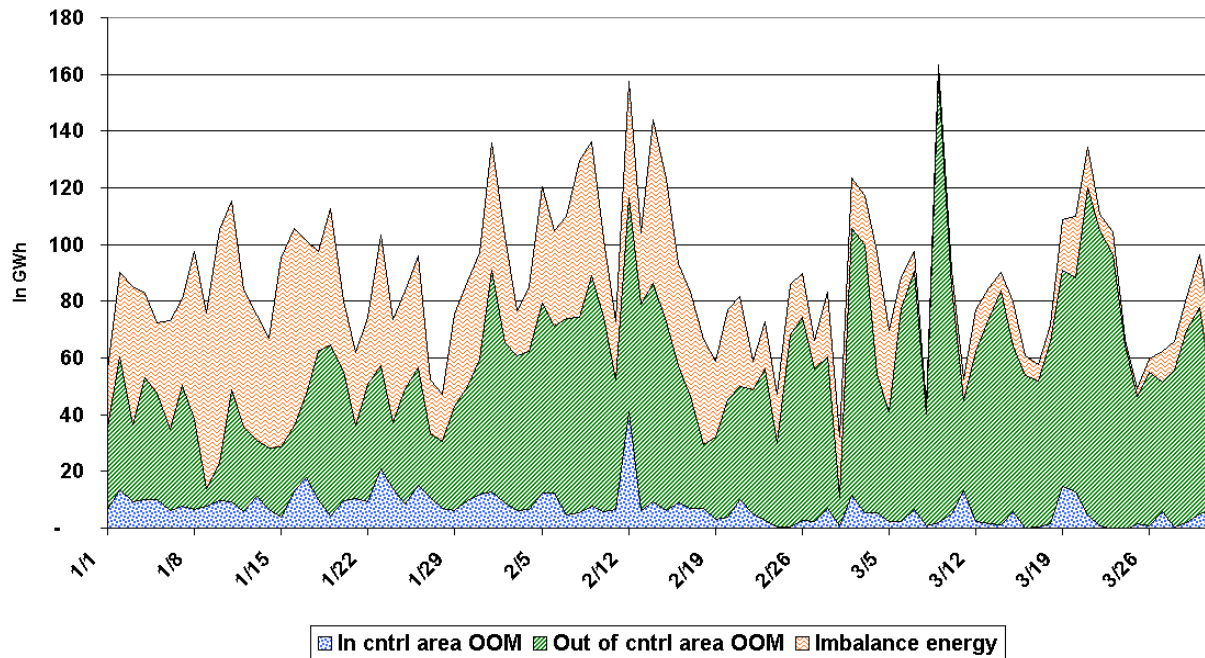


Cost of Real Time Purchases by the California Independent System Operator Purchases

Figure 3 shows the daily cost of real time purchases by the CAISO over the first quarter. The estimated total cost of real time, out of market and imbalance energy, purchases over the quarter is approximately \$2.6 billion.

Daily expenditures averaged \$28 million, with a low of \$7 million and a high of \$73 million. These expenditures include some of the purchases made by the California Energy Resource Scheduler (CERS) on behalf of the State of California.

Figure 4
CAISO Energy Purchases
In-Control Area and Out of Control Area OOM
and Imbalance Energy Purchases

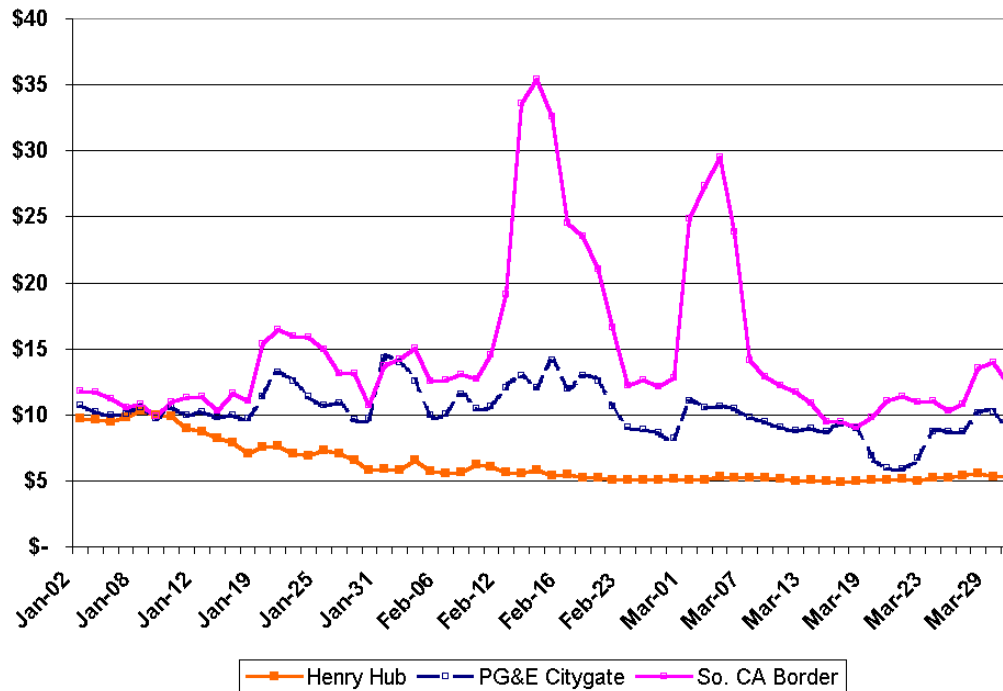


CAISO Energy Purchases by Type

Figure 4 shows the proportions of CAISO energy purchases by type, in control area out of market (OOM), out of control area OOM and imbalance energy. Early in the quarter, CAISO purchases were distributed among the three. However, by the middle of February, purchases from out of control area OOM entities became an increasingly important share of the total. By March, the great majority of purchases are out of control area OOM.

The majority of real time purchases are out of control area OOM purchases. Out of control area OOM purchases could be agreements to purchase from out of state entities, such as Powerex, or from in state entities that have not joined the CAISO, such as the Los Angeles Department of Water and Power (LADWP).

Figure 5
Daily Average Spot Natural Gas Prices
(in \$/mmbtu)

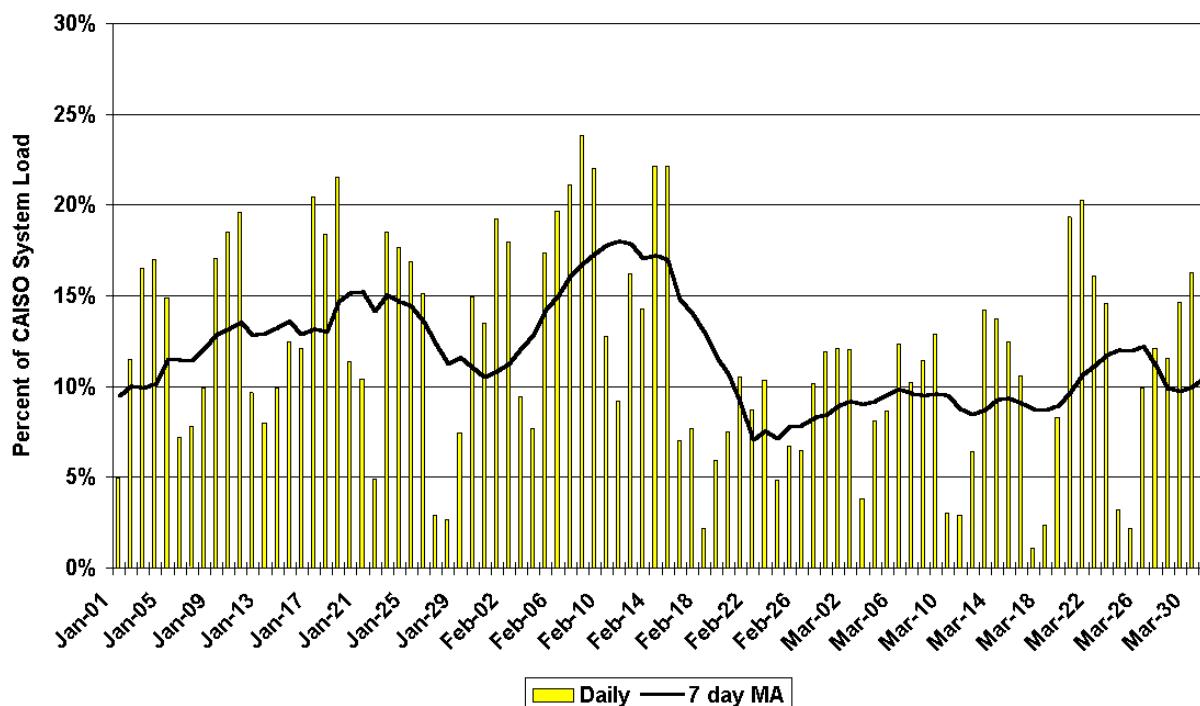


Natural Gas Prices

Natural gas prices started the quarter at about \$10.00 to \$12.00 per mmbtu in California. The price at Henry Hub, Louisiana was slightly less at just under \$10.00 per mmbtu. The Henry Hub price slowly fell about mid-January, falling below \$5.00 per mmbtu before ending the quarter at \$5.31 per mmbtu.

By contrast, natural gas prices at the PG&E Citygate and the Southern California border showed no such decline. Southern California border prices were the most volatile, once reaching \$35.00 per mmbtu on February 14 before ending the quarter at about \$12.00 per mmbtu. The PG&E Citygate price was not as volatile, reaching about \$14.00 per mmbtu at the end of January before ending the quarter at under \$9.00 per mmbtu.

Figure 6
Load Unscheduled Day Ahead
Daily and 7 Day Moving Average



Load Unscheduled Day Ahead

Figure 6 shows the percentage of CAISO actual system load against which generation was not scheduled on a day ahead basis. This is an indication of the amount of load that the CAISO might have to meet in real time with OOM or imbalance energy purchases. The columns on the figure are the daily percent of load unscheduled. The black line is the 7-day moving average of that percentage.

The California Energy Resource Scheduler (CERS) has stepped in to be the purchaser of the IOUs “net short” position. CERS has been purchasing power on a regular basis since January 19, 2001. Since that time, load unscheduled day ahead has, on a regular basis, exceeded the 5 percent deadband imposed by the Federal Energy Regulatory Commission. The percentage of unscheduled load has varied from a low of 1 percent on March 17 and to a high of 24 percent on February 8. Prior to the CERS’s authorization to begin purchases on January 19, load unscheduled day ahead was approximately 20 percent. Unscheduled load during weekdays through mid-February remained high, typically in the range of 15 to 20 percent. Unscheduled weekend loads were lower, usually ranging from below 5 percent to 10 percent.

In addition to the daily load unscheduled day ahead, I also show the 7-day moving average (black line in Figure 1) in order to smooth out volatility, so that trends are more easily seen. As one can see, the 7-day moving average was in the range of 10 to 15 percent through much of January. In February, the moving average began to rise before falling in the latter half of

February and into March. In this most recent period, the moving average has been in the range of 5 to 10 percent, usually in the upper end of the range¹.

¹ I use the 7 day moving average to make two points. First, there is considerable volatility in unscheduled load, with peaks in mid-week and lows typically in the end of week, weekend or beginning of the week. Second, given that volatility, it may not be reasonable to expect an entity to perfectly forecast on a daily basis. I believe that it would be more reasonable to use some averaging method over a week.